Electronic Version
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Claims

[c1] 1. A method of administering a pharmaceutical agent suited for iontophoretic delivery to a human or animal subject, comprising:
first, performing a point-locating step by locating on a subject to be treated a preselected neurodermal point for receiving the pharmaceutical agent;
second, performing a patch application step by applying to the subject, over the preselected neurodermal point, an iontophoretic patch containing the pharmaceutical agent to be administered; and
third, performing a delivery step by applying an electrical potential across the iontophoretic patch and the subject and delivering the pharmaceutical drug from the patch to the subject at the neurodermal point by iontophoresis.

[c2] 2. The method of Claim 1, wherein the pharmaceutical agent is selected from the group consisting of an NMDA receptor blocker, a GABA receptor blocker, an AMPA receptor blocker, a nitric oxide synthase receptor blocker, a calcium channel blocker, an ACDP receptor blocker, a prostaglandin blocker, a leukotriene blocker, a substance P blocker, a bradykinin blocker, a neurotenin blocker, a

peptide blocker, a TNF alpha blocker, a sympathetic alpha 1 receptor blocker, a sympathetic alpha 2 receptor blocker, a non-NMDA calcium-channel blocker, and combinations thereof.

[c3] 3. The method of Claim 2, wherein the pharmaceutical agent is carried in a topical vehicle comprising a pluronic lecithin organogel.

[c4] 4. The method of Claim 1, wherein the pharmaceutical agent is selected from the group consisting of ketamine, gabapentin, carbamazepine, clonidine, phenoxybenzamine, nifedipine, and combinations thereof.

[c5] 5. The method of Claim 4, wherein the pharmaceutical agent is carried in a topical vehicle comprising a pluronic lecithin organogel.

[c6] 6. The method of Claim 1, wherein the pharmaceutical agent comprises phenoxbenzamine, ketamine, and gabapentin in an approximate quantity ratio of 2:5:5.

[c7] 7. The method of Claim 6, wherein the pharmaceutical agent comprises by volume approximately 2% phenoxbenzamine, 5% ketamine, and 5% gabapentin carried in a topical vehicle.

[c8] 8. The method of Claim 7, wherein the topical vehicle

comprises a pluronic lecithin organogel.

[c9] 9. The method of Claim 1, wherein the pharmaceutical agent comprises a carrier containing ketamine in a quantity of at least 2% and clonidine in a quantity of at least 0.2% in concentration by volume, unbuffered.

[c10] 10. The method of Claim 9, wherein the ketamine and clonidine each are in a concentration range of 2% to 4% by volume.

[c11] 11. The method of Claim 1, wherein said point locating step is performed by applying an electronic point finder to the subject's body and detecting a point of reduced electrical resistance relative to the electrical resistance of a surrounding body area.

[c12] 12. The method of Claim 1, wherein said point locating step is performed by applying an acupuncture point finder to the subject's body and locating an acupuncture point.

[c13] 13. The method of Claim 1, wherein said point locating step is performed by selecting an acupuncture point on the subject's body.

[c14] 14. The method of Claim 1, wherein said point locating step is performed by applying a nerve stimulator to the

subject's body and locating a point producing a muscle stimulation.

[c15] 15. The method of Claim 1, wherein:
the iontophoretic patch is multi-layered, comprising at least one layer containing a pharmaceutical agent and at least one juxtaposed layer containing a pH buffered electrolyte; and a means for applying an iontophoretic electrical current across the patch and the subject.

[c16] 16. The method of Claim 15, wherein the iontophoretic patch comprises:
a first layer containing a pharmaceutical agent selected from the group consisting of ketamine, gabapentin, carbamazepine, clonidine, phenoxybenzamine, and nifedipine;
a second layer containing a pharmaceutical agent different from the agent contained in said first layer and selected from the group consisting of ketamine, gabapentin, carbamazepine, clonidine, phenoxybenzamine, and nifedipine; and
a third layer interposed between said first and second layers and containing a pH buffered electrolyte.

[c17] 17. The method of claim 1, wherein the pharmaceutical agent comprises a combination of dextromethorphan, clonidine, magnesium chloride, and amantadine.

[c18] 18. A method of treating pain in a human or animal subject by administering a combination of preselected effective pharmaceutical agents in a suitable dosage to treat a subject in need thereof, comprising:
first, performing a point locating step by locating a predetermined neurodermal point associated with the pain;
second, providing the preselected pharmaceutical agents for treating pain in a gel patch suited for delivery by electrically driving charged ions of the pharmaceutical agents from the path and into the subject;
third, performing an application step by applying the provided gel patch to the predetermined neurodermal point on the subject; and
fourth, performing a delivery step by delivering the selected pharmaceutical agents from the patch to the subject by electrically driving charged ions of the pharmaceutical agents into the subject.

[c19] 19. The method of Claim 18, wherein the preselected pharmaceutical agents are selected from the group consisting of an NMDA receptor blocker, a GABA receptor blocker, an AMPA receptor blocker, a nitric oxide synthase receptor blocker, a calcium channel blocker, an ACDP receptor blocker, a prostaglandin blocker, a leukotriene blocker, a substance P blocker, a bradykinin blocker, a neurotenin blocker, a peptide blocker, a TNF

alpha blocker, a sympathetic alpha 1 receptor blocker, a sympathetic alpha 2 receptor blocker, a non-NMDA calcium-channel blocker, and combinations thereof.

[c20] 20. The method of Claim 19, wherein the preselected pharmaceutical agents are carried in a topical vehicle comprising a pluronic lecithin organogel.

[c21] 21. The method of Claim 18, wherein the preselected pharmaceutical agents are selected from the group consisting of ketamine, gabapentin, carbamazepine, clonidine, phenoxybenzamine, nifedipine, dextromethorphan, magnesium chloride, amantadine and combinations thereof.

[c22] 22. The method of Claim 21, wherein the preselected pharmaceutical agents are carried in a topical vehicle comprising a pluronic lecithin organogel.

[c23] 23. The method of Claim 18, wherein the preselected pharmaceutical agents comprise phenoxbenzamine, ketamine, and gabapentin in an approximate quantity ratio of 2:5:5.

[c24] 24. The method of Claim 23, wherein the preselected pharmaceutical agents comprises by volume approximately 2% phenoxbenzamine, 5% ketamine, and 5% gabapentin carried in a topical vehicle.

[c25] 25. The method of Claim 24, wherein the topical vehicle comprises a pluronic lecithin organogel.

[c26] 26. The method of Claim 18, wherein the preselected pharmaceutical agents comprises a carrier containing ketamine in a quantity of at least 2% and clonidine in a quantity of at least 0.2% in concentration by volume, un-buffered.

[c27] 27. The method of Claim 26, wherein said ketamine and clonidine each are in a concentration range of 2% to 4% by volume.

[c28] 28. The method of Claim 18, wherein said point locating step is performed by applying an electronic point finder to the subject's body and detecting a point of reduced electrical resistance relative to the electrical resistance of a surrounding body area.

[c29] 29. The method of Claim 18, wherein said point locating step is performed by applying an acupuncture point finder to the subject's body and locating an acupuncture point.

[c30] 30. The method of Claim 18, wherein said point locating step is performed by selecting an acupuncture point on the subject's body.

[c31] 31. The method of Claim 18, wherein said point locating step is performed by applying a nerve stimulator to the subject's body and locating a point producing a muscle stimulation.

[c32] 32. The method of Claim 18, wherein said step of providing a gel patch further comprises:
providing a multi-layered gel patch having at least one layer containing at least one selected pharmaceutical agent and at least one juxtaposed layer containing a pH buffered electrolyte; and
providing a means for applying an electrical current across the patch and the subject for electrically delivering ions of the selected pharmaceutical agent to the subject.

[c33] 33. The method of Claim 32, wherein the multi-layer gel patch comprises:
a first layer containing at least one pharmaceutical agent selected from the group consisting of ketamine, gabapentin, carbamazepine, clonidine, phenoxybenzamine, and nifedipine;
a second layer containing at least one pharmaceutical agent different from an agent contained in said first layer and selected from the group consisting of ketamine, gabapentin, carbamazepine, clonidine, phenoxybenza-

mine, and nifedipine; and

a third layer interposed between said first and second layers and containing a pH buffered electrolyte.

[c34] 34. The method of Claim 33, wherein said means for applying an electrical current comprises:

a battery supplying DC current; and

a means for selectively delivering the current in unipolar or bipolar mode;

a means for selecting the direction of current flow; and

a means for selectively delivering the current as straight DC current or pulsed DC current.